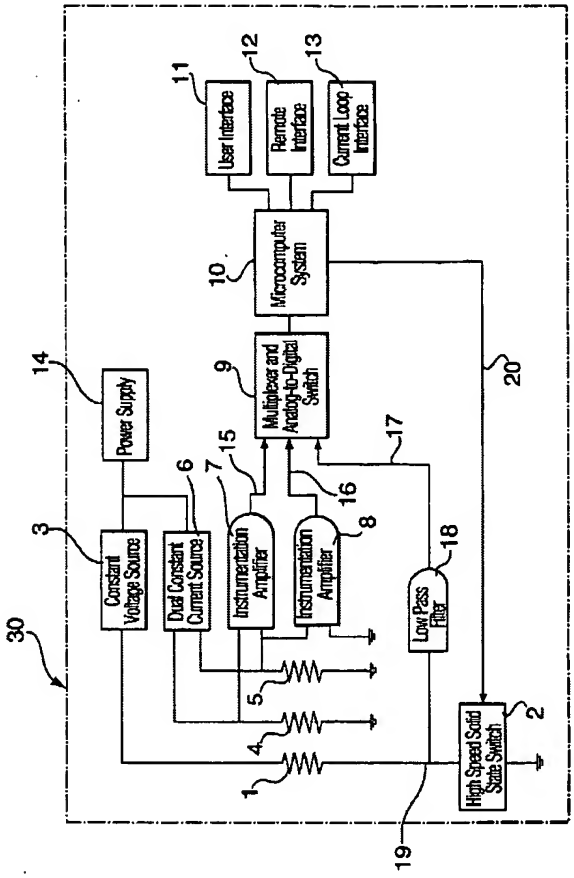


FIG. 1

US-PAT-NO: 6318168

DOCUMENT-IDENTIFIER: US 6318168 B1

TITLE: Thermal dispersion probe with microcomputer controller

——— KWIC ———

Detailed Description Text - DETX (10):

The user interface 11 consists of a display for sending information to a user and a keypad for receiving information from a user. The information input by the user is used by the microcomputer 10 to determine the desired operation of the unit. Many applications, for example in hazardous environments, prohibit the user from using the user interface 11. The remote interface 12 is provided for a user to monitor or control the unit from a remote location. The remote interface 12 consists of physical such as RS-232 or RS-485 and a data interface such as Modbus. For any applications requiring an analog output, a current loop interface 13 is provided. The current loop interface 13 sinks a current between four and twenty milliamps to represent the thermal signal 15. The relationship between the thermal signal 15 and the output of the current loop interface 13 is determined by variables entered by the user via one of the user interfaces 11 or 12.

	U	1	Document I	Issue Dat	Pa	Current C	Current XR	Tit
1	☐	☐	US 6234030	2001052	26	73/861.04	73/195;	Multiphase mete
2	☐	☐	US 5821405	1998101	14	73/53.01	73/170.29;	Modular water q
3	☐	☐	US 5655403	1997081	43	73/322.5	33/759;	Reversible float
4	☐	☐	US 6318168	2001112	7	73/204.15	340/515;	Thermal dispers
5	☑	☐	US 6631636	2003101	8	73/121	73/46	Device for testin
6	☑	☐	US 6449732	2002091	57	714/12	713/400	Method and app
7	☑	☐	US 5862391	1999011	126	713/300		Power managen
8	☑	☐	US 5862052	1999011	46	713/1	719/315	Process control

EAST Browser - [2: [123] modbus] [US 6449732] [Tag: S] [Doc: 6/123 (SUBTLED)] "Full" [Total images 57]
File Edit View Tools Window Help

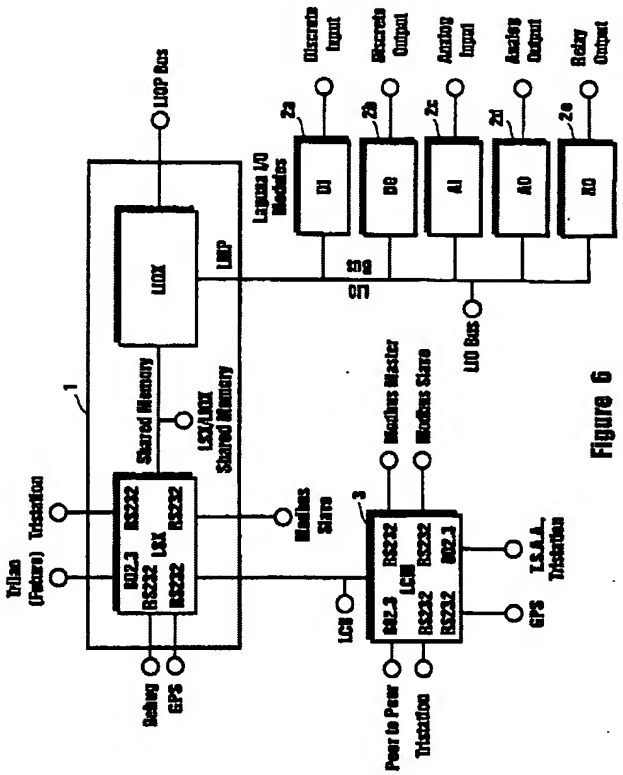


Figure 6

KWIC

Brief Summary Text - BSTX (22):

In addition, each MP can provide direct development and monitoring computer support and Modbus communication Each MP provides one (IEEE 802.3 Ethernet) Development System computer port for downloading the application program to the Trident controller and uploading diagnostic information., one Modbus RE-232/RS-485 serial port which acts as a slave while an external host computer is the master. Typically, a distributed control system (DCS) monitors and optionally updates the controller data directly through an MP.

Detailed Description Text - DETX (14):

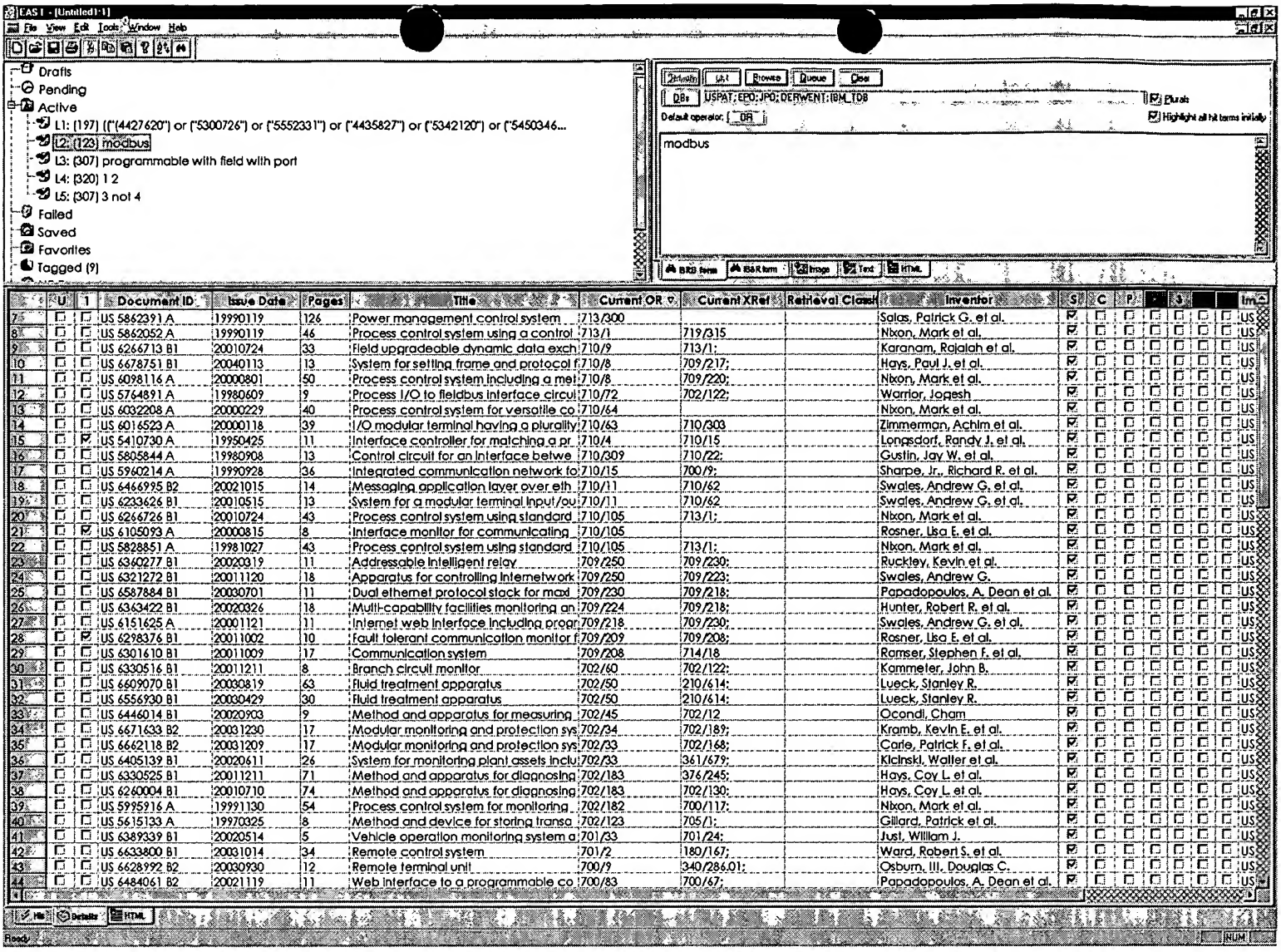
In addition each MP module 1 can provide direct development and monitoring computer 6 support (Development System) and Modbus 5 communications. Each MP module 1 provides one (IEEE 802.3 Ethernet) Development System computer port for downloading the application program to the controller and uploading diagnostic information. One Modbus RE-232/RS-485 serial port which acts as a slave while an external host computer is the master. Typically, a distributed control system (DCS) monitors and optionally updates the controller 31 data directly through an MP module 1 connection.

Detailed Description Text - DETX (39):

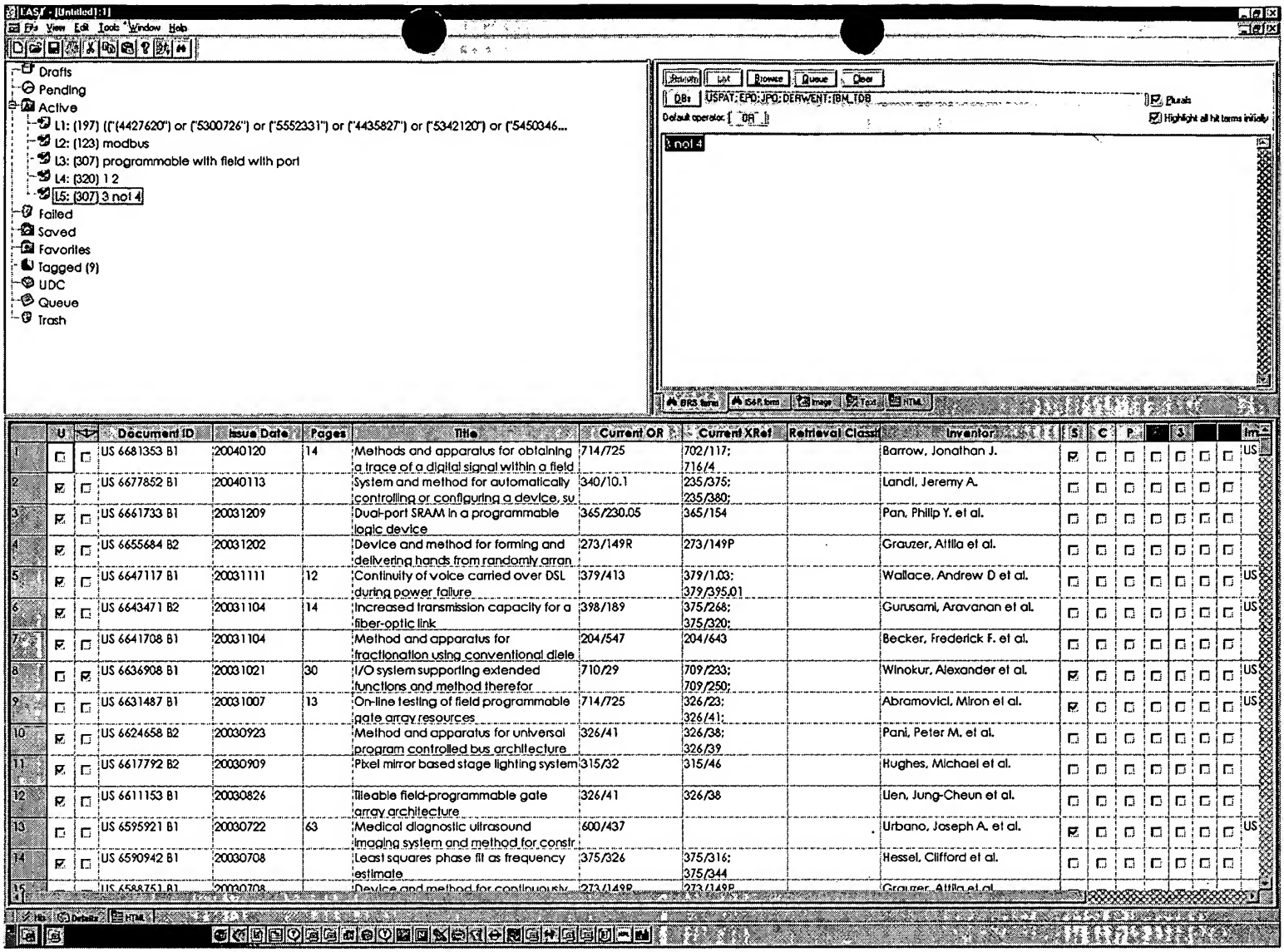
The Main Processor, MP/IOP module 1 comprises at least two semi-independent sections, the MP 15 (main processor) and the IOP 17 (Input/Output Processor). Also provided are a Modbus port 5 which is a Modicon protocol port. The system supports acting as a slave to the port 5 communication link. A development system port 6 is also provided through which the application program developed may be downloaded from a development PC or other computer and the controller 31 monitored. Communications between the main processor MP 15 sections and other main processor sections of other MP/IOP modules 1 takes place over the Channel 11. Communication between the Input/Output, IOP sections 17 with other processor IOP sections 17 takes place over the IOP bus 14. Communications between the MP/IOP module 1 and communications CM module 3 take place over

KWIC

	U	1	Document I	Issue Dat	Pa	Current C	Current XR	Tit
1	☐	☐	US 6234030	2001052	26	73/861.04	73/195;	Multiphase mete
2	☐	☐	US 5821405	1998101	14	73/53.01	73/170.29;	Modular water qi
3	☐	☐	US 5655403	1997081	43	73/322.5	33/759;	Reversible float
4	☐	☐	US 6318168	2001112	7	73/204.15	340/515;	Thermal dispers
5	☐	☐	US 6631636	2003101	8	73/121	73/46	Device for testin
6	☐	☐	US 6449732	2002091	57	714/12	713/400	Method and app
7	☑	☐	US 5862391	1999011	126	713/300		Power managen
8	☑	☐	US 5862052	1999011	46	713/1	719/315	Process control



	U	1	Document ID	Issue Date	Pages	Title	Current OR	Current XRef	Retrieval Classif	Inventor	S	C	P	3	Im
7			US 5862391 A	19990119	126	Power management control system	713/300			Salas, Patrick G. et al.					US
8			US 5862052 A	19990119	46	Process control system using a control	713/1	719/315		Nixon, Mark et al.					US
9			US 6266713 B1	20010724	33	Field upgradeable dynamic data exch	710/9	713/1;		Karanam, Rajaiah et al.					US
10			US 6678751 B1	20040113	13	System for setting frame and protocol f	710/8	709/217;		Hays, Paul J. et al.					US
11			US 6098116 A	20000801	50	Process control system including a met	710/8	709/220;		Nixon, Mark et al.					US
12			US 5764891 A	19980609	9	Process I/O to fieldbus interface circui	710/72	702/122;		Warrior, Jogesh					US
13			US 6032208 A	20000229	40	Process control system for versatile co	710/64			Nixon, Mark et al.					US
14			US 6016523 A	20000118	39	I/O modular terminal having a plurality	710/63	710/303		Zimmerman, Achim et al.					US
15			US 5410730 A	19950425	11	Interface controller for matching a pr	710/4	710/15		Longsdorf, Randy J. et al.					US
16			US 5805844 A	19980908	13	Control circuit for an interface betwe	710/309	710/22;		Gustin, Jay W. et al.					US
17			US 5960214 A	19990928	36	Integrated communication network fo	710/15	700/9;		Sharpe, Jr., Richard R. et al.					US
18			US 6466995 B2	20021015	14	Messaging application layer over eth	710/11	710/62		Swales, Andrew G. et al.					US
19			US 6233626 B1	20010515	13	System for a modular terminal input/ou	710/11	710/62		Swales, Andrew G. et al.					US
20			US 6266726 B1	20010724	43	Process control system using standard	710/105	713/1;		Nixon, Mark et al.					US
21			US 6105093 A	20000815	8	Interface monitor for communicating	710/105			Rosner, Lisa E. et al.					US
22			US 5828851 A	19981027	43	Process control system using standard	710/105	713/1;		Nixon, Mark et al.					US
23			US 6360277 B1	20020319	11	Addressable intelligent relay	709/250	709/230;		Ruckley, Kevin et al.					US
24			US 6321272 B1	20011120	18	Apparatus for controlling internetwork	709/250	709/223;		Swales, Andrew G.					US
25			US 6587884 B1	20030701	11	Dual ethernet protocol stack for mod	709/230	709/218;		Papadopoulos, A. Dean et al.					US
26			US 6363422 B1	20020326	18	Multi-capability facilities monitoring an	709/224	709/218;		Hunter, Robert R. et al.					US
27			US 6151625 A	20001121	11	Internet web interface including progr	709/218	709/230;		Swales, Andrew G. et al.					US
28			US 6298376 B1	20011002	10	Fault tolerant communication monitor f	709/209	709/208;		Rosner, Lisa E. et al.					US
29			US 6301610 B1	20011009	17	Communication system	709/208	714/18		Ramser, Stephen F. et al.					US
30			US 6330516 B1	20011211	8	Branch circuit monitor	702/60	702/122;		Kammeter, John B.					US
31			US 6609070 B1	20030819	63	Fluid treatment apparatus	702/50	210/614;		Lueck, Stanley R.					US
32			US 6556930 B1	20030429	30	Fluid treatment apparatus	702/50	210/614;		Lueck, Stanley R.					US
33			US 6446014 B1	20020903	9	Method and apparatus for measuring	702/45	702/12		Ocondi, Cham					US
34			US 6671633 B2	20031230	17	Modular monitoring and protection sys	702/34	702/189;		Kramb, Kevin E. et al.					US
35			US 6662118 B2	20031209	17	Modular monitoring and protection sys	702/33	702/168;		Carle, Patrick F. et al.					US
36			US 6405139 B1	20020611	26	System for monitoring plant assets inclu	702/33	361/679;		Klcinski, Walter et al.					US
37			US 6330525 B1	20011211	71	Method and apparatus for diagnosing	702/183	376/245;		Hays, Coy L. et al.					US
38			US 6260004 B1	20010710	74	Method and apparatus for diagnosing	702/183	702/130;		Hays, Coy L. et al.					US
39			US 5995916 A	19991130	54	Process control system for monitoring	702/182	700/117;		Nixon, Mark et al.					US
40			US 5615133 A	19970325	8	Method and device for storing transa	702/123	705/1;		Gillard, Patrick et al.					US
41			US 6389339 B1	20020514	5	Vehicle operation monitoring system a	701/33	701/24;		Just, William J.					US
42			US 6633800 B1	20031014	34	Remote control system	701/2	180/167;		Ward, Robert S. et al.					US
43			US 6628992 B2	20030930	12	Remote terminal unit	700/9	340/286.01;		Osburn, III, Douglas C.					US
44			US 6484061 B2	20021119	11	Web interface to a programmable co	700/83	700/67;		Papadopoulos, A. Dean et al.					US



	U		Document ID	Issue Date	Pages	Title	Current OR	Current XRef	Retrieval Class	Inventor	S	C	P		3			Im
1	☐	☐	US 6681353 B1	20040120	14	Methods and apparatus for obtaining a trace of a digital signal within a field	714/725	702/117; 716/4		Barrow, Jonathan J.	☑	☐	☐	☐	☐	☐	☐	US
2	☑	☐	US 6677852 B1	20040113		System and method for automatically controlling or configuring a device, su	340/10.1	235/375; 235/380;		Landl, Jeremy A.	☐	☐	☐	☐	☐	☐	☐	
3	☑	☐	US 6661733 B1	20031209		Dual-port SRAM in a programmable logic device	365/230.05	365/154		Pan, Philip Y. et al.	☐	☐	☐	☐	☐	☐	☐	
4	☑	☐	US 6655684 B2	20031202		Device and method for forming and delivering hands from randomly arran	273/149R	273/149P		Grauzer, Attila et al.	☐	☐	☐	☐	☐	☐	☐	
5	☑	☐	US 6647117 B1	20031111	12	Continuity of voice carried over DSL during power failure	379/413	379/1.03; 379/395.01		Wallace, Andrew D et al.	☐	☐	☐	☐	☐	☐	☐	US
6	☑	☐	US 6643471 B2	20031104	14	Increased transmission capacity for a fiber-optic link	398/189	375/268; 375/320;		Gurusami, Aravanan et al.	☐	☐	☐	☐	☐	☐	☐	US
7	☑	☐	US 6641708 B1	20031104		Method and apparatus for fractionation using conventional diele	204/547	204/643		Becker, Frederick F. et al.	☐	☐	☐	☐	☐	☐	☐	
8	☐	☑	US 6636908 B1	20031021	30	I/O system supporting extended functions and method therefor	710/29	709/233; 709/250;		Winokur, Alexander et al.	☑	☐	☐	☐	☐	☐	☐	US
9	☐	☐	US 6631487 B1	20031007	13	On-line testing of field programmable gate array resources	714/725	326/23; 326/41;		Abramovici, Miron et al.	☑	☐	☐	☐	☐	☐	☐	US
10	☑	☐	US 6624658 B2	20030923		Method and apparatus for universal program controlled bus architecture	326/41	326/38; 326/39		Pani, Peter M. et al.	☐	☐	☐	☐	☐	☐	☐	
11	☑	☐	US 6617792 B2	20030909		Pixel mirror based stage lighting system	315/32	315/46		Hughes, Michael et al.	☐	☐	☐	☐	☐	☐	☐	
12	☑	☐	US 6611153 B1	20030826		Tileable field-programmable gate array architecture	326/41	326/38		Lien, Jung-Cheun et al.	☐	☐	☐	☐	☐	☐	☐	
13	☐	☐	US 6595921 B1	20030722	63	Medical diagnostic ultrasound imaging system and method for constr	600/437			Urbano, Joseph A. et al.	☑	☐	☐	☐	☐	☐	☐	US
14	☑	☐	US 6590942 B1	20030708		Least squares phase fit as frequency estimate	375/326	375/316; 375/344		Hessel, Clifford et al.	☐	☐	☐	☐	☐	☐	☐	
15			US 6588751 B1	20030708		Device and method for continuously	273/149R	273/149P		Grauzer, Attila et al.								